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EXAMINER

KUNDMUND, ROBERT M

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Paper No. 100

Application Number: 09/032,305  
Filing Date: February 27, 1998  
Appellant(s): HENNHOFER ET AL.

\_\_\_\_\_  
Mr. Edward Freedman  
For Appellant

EXAMINER'S ANSWER

MAILED  
JAN 14 2004  
GROUP 1700

This is in response to the appeal brief filed October 6, 2003.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

The claims stand or fall together because appellant's brief contains a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) *Prior Art of Record***

4,692,223	Lampert et al	9-1987
5,219,613	Fabry et al.	6-1993

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 6, 7 and 9 to 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Fabry et al in view of Lampert et al and Hayashida et al.

The Fabry et al reference teaches a method of polishing and oxidizing a silicon wafer. A silicon wafer is first polished by standard polishing techniques. The wafer is removed from the polishing holder prior to oxidation. Then a difference aqueous solution is applied to the wafer. The solution contains an oxidization agent and alkali compound, note, col. 1. The sole difference between the instant claims and the prior art is the specific compounds and timing of the processing steps. However, the Hayashida et al reference teaches the claimed alkali compounds used on silicon substrates, the compounds can be organic or inorganic. The Lampert et al reference teaches that the steps of the process to be done as soon as possible. It would have been obvious to one of ordinary skill in the art to modify the Fabry et al reference by the teachings of the Lampert et al and Hayashida et al references to use specific compounds in order to prevent the introduction of impurities onto the cleaned substrate and to remove from the polishing holder upon completion of polishing in order to prevent impurities as taught by the Fabry et al reference.

**(11) Response to Argument**

Appellants' argument concerning the teachings of the Fabry et al reference is noted. However, the intermediate step of cleaning the wafer after polishing is not a required step in the reference. In fact it can only be found in one example. There is no teaching of cleaning after polishing in the specification of Fabry et al. There is also no teaching in the reference that requires a cleaning step. Appellants are clearly unduly limiting the scope of the reference.

Appellants' argument concerning the teachings of the Lampert reference has been considered and not deemed persuasive. The examiner has pointed out where in the Lampert reference the teachings exist. In column one of the reference there is a specific teaching of the problems if one does not oxidize the wafer surface after polishing. The reference states that the polished surfaces are damaged by dust particles and other compounds, which lead to a haze on the wafer surface. The reference is teaching to one of ordinary skill in the art to immediately oxidize the surface to prevent this. The Lampert reference gives a teaching in the art that there is a problem if one waits to oxidize the wafer surface.

Appellants' argument concerning the declaration of Henhofer is noted. However, the declaration is not over the closest prior art of record. Further, the instant specification teaches the same process as Lampert, oxidizing in the plating. In fact, during the history of this application this process was claimed. Further, the instant specification does not teach a difference between oxidizing separately or in the same apparatus. Thus, the declaration is inconsistent with the instant specification. For the above reasons, the declaration is not persuasive.

Appellants' argument that it is impossible to combine references has been considered and not deemed persuasive. The combination of references as set forth by the examiner is that Lampert teaches the need to oxidize as soon as possible to prevent hazing. The modification to the Fabry et al reference is then to do the oxidization step as soon as possible in the Fabry et al reference. The motivation to change this is prevent damage and the need to repolish a wafer.

Appellants' argument concerning the advisory action is noted. Examples 2 and 3 of Fabry et al are not concerned with the processing of the wafer but tests after the process to see the effectiveness of the wafer. That is why they do not contradict example 1. It there for remains that the only place in the reference a cleaning step is mentioned in one example. A reference cannot be limited by the teachings of one example. Since there exists no other teaching and the specification sets forth a process with out a cleaning step, it is improper to assume that the reference requires such a set, as is argued by appellants. Further, when the reference discusses the timing of the steps, it does indicate that is should be done quickly, the term "expediently" is used in the reference note col. 2 lines 64-68. Appellants are *merely* pointing out the upper range of the timing and ignoring the term "expediently".

Appellants' argument concerning col. 5 of Fabry et al has been considered and not deemed persuasive. Appellants have not support for their statement that the reference teaches away from "immediately" just because the reference does not state that exact word. Again, these appellants are improperly limiting the scope of the

reference without any basis. It is pointed out, that the reference does state "expediently" doing this processing.

Appellants' argument concerning the advisory action in view of the Lampert reference is noted. As stated above, the examiner is relying on the Lampert reference to show the art conventionality of polishing and then oxidizing in an immediately manner. The reference does teach to one of ordinary skill in the art as to why one of ordinary skill does not wait.

The combination of references does teach the entire claimed invention. There is motivation and reasons to combine references that come straight from the references applied against the claims. The combination as set forth by the examiner is to do the oxidizing step immediately after the polishing step, as set forth in the Fabry et al reference. As the Lampert reference teaches that one of ordinary skill in the art wants to do these steps immediately.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

  
ROBERT KUNEMUND  
PRIMARY EXAMINER

RMK  
January 9, 2004

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